AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for the heat treatment of solids containing titanium, in which fine-grained solids are treated at a temperature of 700 to approximately 950°C in a fluidized bed reactor, ~~wherein~~ comprising introducing a first gas or gas mixture ~~is introduced~~ from below through at least one preferably central gas supply tube into a mixing chamber of the reactor located above the upper orifice region of the gas supply tube, the gas supply tube being at least partly surrounded by a stationary annular fluidized bed which is fluidized by supplying fluidizing gas, wherein the gas flowing through the gas supply tube entrains solids from the fluidized bed into the mixing chamber when passing through the upper orifice region of the gas supply tube, and ~~that~~ adjusting the gas velocities of the first gas or gas mixture as well as of the fluidizing gas for the annular fluidized bed ~~are adjusted~~ such that the particle Froude numbers in the gas supply tube are between 1 and 100, in the annular fluidized bed between 0.02 and 2 and in the mixing chamber between 0.3 and 30.

2. (Currently amended) The method as claimed in claim 1, wherein the particle Froude number in the gas supply tube lies between 1.15 and 20~~, in particular is approximately 12 to 15~~.

3. (Currently amended) The method as claimed in claim 1 wherein the particle Froude number in the annular fluidized bed is between 0.115 and 1.15~~, in particular approximately 0.2 to 0.4~~.

4. (Currently amended) The method as claimed in Claim 1, wherein the particle Froude number in the mixing chamber is between 0.37 and 3.7~~, in particular approximately 1.4~~.

5. (Currently amended) The method as claimed in Claim 1, wherein the bed height of solids in the reactor is adjusted such that the annular fluidized bed extends at least partly beyond the upper orifice end of the gas supply tube ~~and that solids are constantly introduced into the first gas or gas mixture and entrained by the gas stream to the mixing chamber located above the orifice region of the gas supply tube~~.

6. (Currently amended) The method as claimed in Claim 1, wherein the ~~first gas or gas mixture is passed through a~~ gas supply tube is provided with apertures on its shell surface~~, for example in the form of slots~~.

7. (Currently amended) The method as claimed in Claim 1, wherein the fine-grained solids comprise ilmenite ~~is used as the starting material~~ and is reduced in the reactor.

8. (Previously presented) The method as claimed in Claim 1, wherein hydrogen-containing gas is supplied to the reactor.

9. (Currently amended) The method as claimed in claim 8, wherein hydrogen-containing gas with a hydrogen content of 75 to 100%~~, in particular of 85 to 95%,~~ is introduced into the reactor through the gas supply tube and/or into the annular fluidized bed.

10. (Currently amended) The method as claimed in claim 8 wherein the hydrogen-containing gas contains between 0 and 5%~~, in particular between 0.3 and 4.0%,~~ of water ~~vapour~~ vapor and between 5 and 10%~~, in particular between 7 and 8%,~~ of nitrogen.

11. (Currently amended) The method as claimed Claim 8, wherein the hydrogen-containing gas is introduced into the reactor with a temperature of between 820 and 900°C~~, in particular between 840 and 880°C~~.

12. (Currently amended) The method as claimed in ~~Claim 8~~ claim 1, wherein at least part of the exhaust gas of a second reactor, provided downstream of the reactor, is passed through the gas supply tube into the reactor.

13. (Currently amended) The method as claimed in ~~Claim 8~~ claim 1, wherein the amount of iron contained in the solids is reduced in the reactor to at least 70%~~, in particular to approximately 80%~~.

14. (Currently amended) The method as claimed in Claim 12, wherein the amount of iron contained in the solids is reduced in the downstream second reactor to at least 90%~~, in particular approximately 97%~~.

15. (Currently amended) The method as claimed in ~~Claim 12~~ claim 1, wherein following re-processing by separation of the solids, cooling and separation of the water, at least part of the exhaust gas of the reactor is heated up and supplied to the annular fluidized bed ~~of the reactor~~ through ~~the~~ a conduit.

16. (Previously presented) The method as claimed in Claim 12, wherein a cooling stage for the solids is provided downstream of the second reactor.

17. (Currently amended) The method as claimed in Claim 12, wherein a separating stage for separating the solids from the exhaust gas is respectively provided downstream of both the reactor and ~~of~~ the ~~downstream~~ second reactor, and ~~that~~ wherein the separated solids are at least partly supplied to the respective stationary fluidized beds of the reactors.

18. (Currently amended) The method as claimed in Claim 1, wherein the fine-grained solids comprise ilmenite ~~is used as the starting material~~ and is magnetically roasted in the reactor.

19. (Currently amended) The method as claimed in claim 18, wherein fuel<u>,</u> which[[,]] by its combustion with an oxygen-containing gas[[,]] generates at least part of the amount of heat required for the thermal treatment<u>,</u> is supplied to the reactor.

20. (Currently amended) The method as claimed in Claim 18, wherein gaseous fuel~~, preferably natural gas,~~ is introduced through lances or the like into <u>both</u> the mixing chamber[[,]] <u>and</u> the annular fluidized bed and/or <u>is introduced</u> through a conduit into the gas supply tube and from there together with oxygen-containing gas <u>is introduced</u> into the reactor, and ~~that~~ <u>wherein</u> compressed ambient air or pre-heated air is introduced as fluidizing gas via a supply conduit and a gas distributor into the annular fluidized bed ~~of the reactor (1)~~.

21. (Currently amended) The method as claimed in Claim 18, wherein air, which is pre-heated, ~~in particular in a cooling stage provided downstream of the reactor, and possibly dust-laden,~~ is introduced into the reactor through the gas supply tube.

22. (Currently amended) The method as claimed in Claim 18, wherein solids are removed ~~from the reactor~~ from the annular fluidized bed and supplied to a cooling stage~~, in particular to a suspension heat exchanger,~~ in which the solids are subjected <u>both</u> to a cooling medium~~, such as air,~~ and to a downstream separator~~, for example a cyclone~~.

23. (Currently amended) The method as claimed in Claim 18, wherein at least part of the exhaust gas of the reactor is largely separated from solids in a downstream separator~~, in particular a cyclone,~~ and supplied to a pre-heating stage upstream of the reactor <u>equipped</u> with a dryer~~, for example a venturi dryer,~~ and a separator~~, for example a cyclone,~~ for drying and pre-heating the solids to be supplied to the reactor.

24. (Currently amended) The method as claimed in claim 23, wherein the solids separated from the exhaust gas in the <u>downstream</u> separator ~~provided downstream of the reactor~~ are supplied to the annular fluidized bed and/or <u>to</u> the suspension heat exchanger.

25. (Previously presented) The method as claimed in Claim 18, wherein the solids removed from the reactor are supplied after a first cooling stage or directly to a further cooling stage, which has a fluidized injection cooler and/or fluidized bed cooler.

26. (Currently amended). The method as claimed in claim 25, wherein the solids are cooled to below 300°C~~, in particular to below 200°C,~~ in the injection cooler by injecting water and are cooled to ~~the~~ a further processing temperature in the fluidized bed coolers by water passed ~~in counter-current~~ counter-currently through cooling coils.

27. (Currently amended) The method as claimed in claim 25 wherein the exhaust gas of the further cooling stage and the exhaust gas of the separator of the pre-heating stage ~~is~~ are supplied to a further separator~~, in particular a bag filter~~, and ~~that~~ wherein the solids separated in the further separator are supplied to one of the fluidized bed coolers.

28. (Currently amended) A plant for the heat treatment of solids containing titanium~~, in particular for performing a method as claimed in Claim 1~~ comprising a fluidized bed reactor ~~constituting a fluidized bed reactor~~, wherein the reactor ~~has a~~ comprises at least one gas supply ~~system~~ tube being at least partly surrounded by an annular chamber in which a stationary annular fluidized bed is located, and the mixing chamber being located above the upper orifice region of the gas supply tube, ~~which is formed such that~~ wherein the gas flowing through the gas supply ~~system~~ tube entrains solids from ~~a~~ the stationary annular fluidized bed~~, which at least partly surrounds the gas supply system,~~ into the mixing chamber when passing through the upper orifice region of the gas supply system.

29. (Currently Amended) The plant as claimed in claim 28, wherein the ~~gas supply system has at least one~~ gas supply tube ~~extending~~ extends upwards substantially vertically from the lower region of the reactor into [[a]] the mixing chamber of the reactor~~, the gas supply tube being at least partly surrounded by an annular chamber in which the stationary annular fluidized bed (10) is formed~~.

30. (Currently amended) The plant as claimed in ~~claim 29~~ claim 28, wherein the gas supply tube is arranged approximately centrally with reference to the cross-sectional area of the reactor.

31. (Currently amended) The plant as claimed in ~~claim 29~~ claim 28, further comprising ~~wherein provided~~ in the annular chamber of the reactor ~~is~~ a gas distributor which divides the chamber into an upper fluidized bed region and a lower gas distributor chamber, and ~~that~~ wherein the gas distributor chamber is connected to a supply conduit for ~~in particular~~ heated-up hydrogen-containing or fuel-containing fluidizing gas.

32. (Currently amended) The plant as claimed in ~~Claim 29~~ claim 28, ~~wherein~~ further comprising a solids separator~~, in particular a cyclone, is provided~~ downstream of the reactor, wherein ~~for separating solids, and that~~ the solids separator ~~has~~ comprises a solids conduit leading to the annular fluidized bed of the reactor ~~and/or to the stationary fluidized bed of a second reactor possibly provided downstream~~.

33. (Currently amended) The plant as claimed in ~~Claim 31~~ claim 32, ~~wherein~~ further comprising a re-processing stage for the exhaust gas ~~is provided~~ downstream of the solids separator ~~of the reactor~~.

34. (Currently amended) The plant as claimed in Claim 32, further comprising a second reactor downstream of the reactor, wherein the second reactor ~~likewise has~~ comprises a downstream solids separator, the exhaust gas of which is passed via a supply conduit into the fluidized bed of the first reactor.

35. (Currently amended) The plant as claimed in Claim 28, wherein the reactor ~~has~~ comprises a conduit leading to the gas supply tube and/or to a supply conduit for ~~in particular gaseous~~ fuel[[,]] leading to a lance arrangement which opens out into the annular fluidized bed.

36. (Currently amended) The plant as claimed in ~~Claim 28~~ claim 32, ~~wherein provided~~ further comprising upstream of the reactor ~~is~~ a pre-heating stage for the solids, the dryer of which is connected to the exhaust-gas conduit of the downstream separator ~~provided downstream of the reactor~~, and ~~that~~ further comprising a cooling stage ~~provided~~ downstream of the reactor ~~has~~ comprising an exhaust-gas conduit connected to the gas supply tube.

37. (Currently amended) The plant as claimed in claim 36, ~~wherein~~ further comprising at least one ~~further~~ cooling stage ~~is provided~~ downstream of the reactor.

38. (New) The plant as claimed in claim 28, further comprising a solids separator downstream of the reactor, wherein the solids separator has a solids conduit leading to a stationary fluidized bed of a second reactor provided downstream.